GUIDELINES FOR DECONTAMINATION OF FACILITIES AND EQUIPMENT

PRIOR TO RELEASE FOR UNRESTRICTED USE

OR TERMINATION OF LICENSES FOR BYPRODUCT, SOURCE, OR SPECIALNUCLEAR MATERIAL

U. S. Atomic Energy
Directorate of Licensing
Materials Branch
Washington, D.C. 20545

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The instructions in this guide in conjunction with Tables I and II specify the radioactivity and radiation exposure rate limits which should be used in accomplishing the decontamination and survey of surfaces of premises and equipment prior to abandonment or release for unrestricted use. The limits in Tables I and II do not apply to premises, equipment, or scrap containing induced radioactivity for which the radiological considerations pertinent to their use may be different. The release of such facilities or items from regluatory control will be considered on a case-by-case basis.

1. The licensee shall make a reasonable effort to eliminate residual contamination.

2. Radioactivityon equipment or surfaces shall not be covered by paint, plating, or other covering material unless contamination levels, as determined by a survey and documented, are below the limits specified in Tables I or II prior to applying the covering. A reasonable effort must be made to minimize the contamination prior to use of any covering.

3. The radioactivityon the interior surfaces of pipes, drain lines, or ductwork shall be determined by making measurements at all traps, and other appropriate access points, provided that contamination at these locations is likely to be representative of contamination on the interior of the pipes, drain lines, or ductwork. Surfaces of premises, equipment, or scrap which are likely to be contaminated but are of such size, construction, or location as to make the surface inaccessible for purposes of measurement shall be presumed to be contaminated in excess of the limits.

4. Upon request, the Commission may authorize a licensee to relinquish possession or control of premises, equipment, or scrap having surfaces contaminated with materials in excess of the limits specified. This may include, but would not be limited to, special circumstances such as razing of buildings, transfer of premises to another organization continuing work with radioactive materials, or conversion of faciliites to a long-term storage or standby status. Such requests must:

   a. Provide detailed, specific information describing the premises, equipment or scrap, radioactive contaminants, and the nature, extent, and degree of residual surface contamination.

   b. Provide a detailed health and safety analysis which reflects that the residual amounts of materials on surface areas, together with other considerations such as prospective use of the premises, equipment or scrap, are unlikely to result in an unreasonable risk to the health and safety of the public.

5. Prior to release of premises for unrestricted use, the licensee shall make a comprehensive radiation survey which establishes that contamination is within the limits specified in Tables I or II. A copy of the survey report shall be filed with the Director, Materials Branch, Directorate of Licensing, USAEC, Washington, D.C. 20545, and also the Director of the Regional Office of the Directorate of Regulatory Operations, USAEC, having jurisdiction. The report should be filed at least 30 days prior to the planned date of abandonment. The survey report shall:

   a. Identify the premises.

   b. Show that reasonable effort has been made to eliminate residual contamination.

   c. Describe the scope of the survey and general procedures followed.

   d. State the findings of the surevey in units specified in the instruction.

Following review of the report, the AEC will consider visiting the facilities to confirm the survey.

SURFACE CONTAMINATION LEVELS (1)

ISOTOPE (2)	TABLE I TOTAL (3)	TABLE I REMOVABLE (3)(4)	TABLE II TOTAL (3)	TABLE II REMOVABLE (3)(4)
U-nat, U-235, U-238, Th-nat, Th-232, and associated decay products	10,000 dpm α/100 cm^2	1,000 dpm α/100 cm^2	Average (6) 5,000 dpm α/100 cm^2 Maximum 25,000 dpm α/100 cm^2	1,000 dpm a/100 cm^2
Other isotopes which decay by alpha emission or by spontaneous fission	1,000 dpm α/100 cm^2	100 dpm α/100 cm^2	Average (6) 500 dpm α/100 cm^2 Maximum 2,500 dpm α/100 cm^2	100 dpm α/100 cm^2
Beta-gamma emitters (isotopes with decay modes other than alpha emission or spontaneous fission)	0.4 mrad/hr at 1 cm (5)	1,000 dpm β-γ/100 cm^2	Average (6) 0.2 mrad/hr at 1 cm (5) Maximum 1.0 mrad/hr at 1 cm (5)	1,000 dps β-γ/100 cm^2

(1) Either Table I or Table If may be used. For example, if all beta-gamma readings were less than 0.4 mrad/hr at 1 cm, Table I could be used; but if the maximum reading were 0.8 mrad/hr, material could be released under Table II providing the average was less than 0.2 mrad/hr.

(2) Where surface contamination by both alpha and beta-gamma emitting isotopes exists, the limits established for alpha and beta-gamm emitting isotopes shall apply independently.

(3) As use in t table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the count per minute observed by an appropriate detector and count rate meter for background, efficiency, and geometric factors associated with the instrumentation.

(4) The amount of removable radioactive material per 100 cm^2 of surface area shall be determined by wiping that area with dry filter or soft absorbent paper and with the application of moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. In determining removable contamination on objects of lesser surface area, the pertinent levels shall be reduced proportionally, and the entire surface shall be wiped.

(5) Measured through not more than 7 milligrams per square centimeter of total absorber.

(6) Measurements of total contaminant shall not be averaged over more than 10 square meters. For objects of lesser surface area, the average shall be derived for each such